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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,957	07/24/2003	Sumit Talwalkar	MOTB:033US	1631

7590 02/21/2007  
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EXAMINER
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TSE, YOUNG TOI

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/625,957	TALWALKAR ET AL.	
	Examiner	Art Unit	
	YOUNG T. TSE	2611	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20030724</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 11-28 in the reply filed on November 30, 2006 is acknowledged.
2. Claims 1-10 have been drawn to a non-elected invention. Election was made without traverse in the reply filed on November 30, 2006.

### ***Claim Objections***

3. Claims 11-28 are objected to because of the following informalities:

In claim 11 (line 7), claim 16 (line 7), and claim 22 (line 15), the term "a quadrature modulator" should be "the quadrature modulator" for clarity. See the preamble in each of claims 11, 16 and 22.

In line 2 of both claims 12 and 17, the word "comprises" should be "comprise".

Claims 13-15 and 18-21 are objected to because they are depended on the independent claims 11 and 16, respectively.

In claim 22, line 3, "the pair of" should be "the first pair of"; line 4, "a quadrature channel" should be "the quadrature modulator"; line 8, "each of the" should be "each of the second"; and line 9, "a quadrature channel" should be "a quadrature demodulator".

In claim 23, lines 1 and 2, "further comprising" and "a pair or" should be "comprising" and "a pair of", respectively.

In line 1 of both claims 24 and 25, "claim 22" should be "claim 23".

In claim 25, line 2, "averaging circuits" should be "averaging circuits and the first pair of summers".

Claim 26 is objected to because it is depended on the independent claim 22.

In claim 27, line 1, "claim 22" should be "claim 26".

In claim 28, line 1, "a carrier in a quadrature modulator" should be "the carrier in the quadrature modulator" for clarity.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 11-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 11-12, 14, 16-17, 20 and 22 contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. For example, each of the independent claims 11, 16 and 22 recites a step of using the

pairs of receiver path and transmitter path correction signals to suppress a carrier signal in a quadrature modulator does not correspond to the disclosure of the drawings.

According to the present invention as shown in Figures 2-4, for instance, Figure 4 discloses a carrier suppression system comprising a correction circuit 150 for generating the pairs of receiver path correction signals 167 and 168 to the subtractors 163 and 164 and the pair of transmitter path correction signals to 151 and 152 to subtractors 113 and 144; an I/Q modulator or quadrature modulator 110 provides another input to the subtractors 113 and 144; and an upconverter or quadrature modulator 120 for converting the outputs of the subtractors 113 and 144 for transmission. However, the carrier signals provided to the mixers or multipliers 125 and 126 of the upconverter or quadrature modulator 120 is generated by a local oscillator 129, not the pairs of receiver path and transmitter path correction signals as recited in claims 11, 16 and 22. For the same reasons, the pairs of receiver path and transmitter path correction signals are not used to suppress a carrier signal in the quadrature modulator 110.

With respect to claims 12 and 17, as described in Figure 4 above, the subtractors 113 and 114 are not used to subtraction a first/second transmitter path correction signal from a first/second upconverter input.

With respect to claims 14 and 20, it is not understood that is meant by "further comprising operating the quadrature modulator"? or how to operate the quadrature modulator?

Claims 13 and 15 are rejected to because they are depended on the independent claim 11.

Claims 17-19 and 21 are rejected to because they are depended on the independent claim 16.

Claims 23-28 are rejected to because they are depended on the independent claim 22.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 11 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Francos et al. U. S. Patent No. 6,801,581 (hereinafter "Francos").

Francos discloses a carrier suppression system in Figure 1 comprising an adaptive DC offset demodulator estimator 50 for performing a search/calibration method to determine a fair of receiver path correction signals; an adaptive DC offset modulator estimator 52 for performing the search/calibration method to determine a fair of transmitter path correction signals; and an IQ modulator 28 for suppress modulating a

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carrier signal for transmission using the pairs of receiver path and transmitter path correction signals. See col. 2, line 51 to col. 3, line 23.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

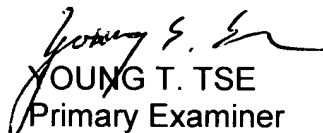
References Kanazawa et al., McCallister et al., Sahlman, Nielsen, and Kirschenmann et al., are related to transmitter and receiver circuits for generating transmitter/receiver correction signals to suppress a carrier signal of a quadrature modulator in the transmitter circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-3051. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
YOUNG T. TSE  
Primary Examiner  
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